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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,759	03/21/2001	Hiroshi Yagi	OPS Case 526	2425

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FLYNN, THIEL, BOUTELL & TANIS, P.C.
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Kalamazoo, MI 49008-1699

EXAMINER

ZERVIGON, RUDY

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/813,759

Applicant(s)

YAGI ET AL.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-7, and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennin et al (USPat. 5,839,193) in view of Horiuchi (USPat. 6,093,476). Bennin teaches a method of manufacturing a laminate structure (10, Figure 3) load beam (32, Figure 4 – “wireless suspension blank”) as part of a head suspension assembly (“HAS”) for disk drives (column 1, lines 14-32; column 3, lines 56-65). Bennin further teaches a multi-layer laminate (10; Figure 3; column 7, lines 10-40) composed of a stainless steel metallic layer (50) with the “spring” property (column 7, lines 11-19) on one side of a polyimide insulating layer (90; column 7, lines 20-40), and a third metallic layer (70; column 8, line 23 - BeCu) wiring part defined by a pattern (71; Figure 6; column 6, lines 23-35) of conductive material. The pattern including “Conventional lead wires or other conductive traces (not shown) can couple the traces 371 to amplifying and control electronics (not shown). ” on the gimbal detail (80; Figure 5; 316; Figure 13) as taught by Bennin (column 11, lines 60-67) – It is inherent that Bennin’s “conventional leads” would include “flying leads” as in known in the art. Inclusive, said insulating layer 90, Figure 5 was removed to expose the third metallic layer as taught by Bennin (column 8, lines 8-10). Bennin further teaches etching (column 7, lines 52-67) the stainless steel metallic layer by wet etching using ferric chloride including double-sided etching (column 8, lines 5-9). Bennin further teaches metallic plating a wiring part by electroplating (column 8, lines 48-55) after forming the wiring part – “A fourth manufacturing step can comprise plating selected areas of

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the first layer 50 and the third layer 70. To improve terminal contacts plating--nickel, gold, silver, tin, etc.--can be applied on connector sites of the third layer 70, such as the proximal end 73 and the distal end 74." As taught by Bennin.

Bennin does not teach etching the stainless steel metallic layer by a photo etching method.

Bennin does not teach plating a wiring part by the semi-additive method.

Horiuchi teaches the manufacture of a wiring composite film (Figures 14-16) including etching a metallic layer (17) by a photo etching method (column 15, lines 50-56) and plating a wiring part by the semi-additive method (column 6, lines 11-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Bennin to etch the stainless steel metallic layer by a photo etching method, and plate a wiring part by the semi-additive method as taught by Horiuchi.

Motivation for Bennin to etch the stainless steel metallic layer by a photo etching method, and for plating a wiring part by the semi-additive method as taught by Horiuchi is to etch the stainless steel metallic layer and plate the wiring part by alternate means as taught by Horiuchi to provide dimensional accuracy (column 2, lines 2-3).

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bennin et al (USPat. 5,839,193) and Horiuchi (USPat. 6,093,476) in view of Mallon (USPat 5,628,869). Bennin and Horiuchi are discussed above. Bennin and Horiuchi do not teach a specific electrode configuration for plasma processing (column 41, lines 12-24). Mallon teaches a both convex and concave electrode configurations for plasma processing (Figures 3-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Bennin and Horiuchi to use Mallon's electrode for plasma processing.

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Motivation for Bennin and Horiuchi to use Mallon's electrode for plasma processing is drawn to wafer topography requirements (column 3, lines 1-18).

Response to Arguments

4. Applicant's arguments filed November 7, 2003 have been fully considered but they are not persuasive.

5. With regards to claim 11, it is acknowledged by the Examiner that the number 11 was indeed inadvertently left out of the claim numbers rejected under 35 U.S.C. 103(a) as being unpatentable over Bennin et al (USPat. 5,839,193) in view of Horiuchi (USPat. 6,093,476). Bennin, however, indeed teaches the claimed subject matter as discussed in the body of the rejected claim. The Examiner found the subject matter of claim 11 to be inherent in the teachings of Bennin in the last Office Action.

6. With regards to Applicant's position that Bennin first starts with a third metallic layer (70; column 8, line 23 - BeCu) wiring part defined by a pattern (71; Figure 6; column 6, lines 23-35) of conductive material as opposed to Applicant's "addition of a third layer", it has been noted previously that Bennin does not teach plating, i.e. "addition of a third layer", wiring part by the semi-additive method. However, it was cited that Horiuchi teaches the manufacture of a wiring composite film (Figures 14-16) including etching a metallic layer (17) by a photo etching method (column 15, lines 50-56) and plating a wiring part by the semi-additive method (column 6, lines 11-17).

7. Applicant states that "one would not use the semi-additive method to replace out the etching step of Bennin since the conductive layer already exists as part of the laminate in Bennin

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and portions of the conductive material must be etched out and not added. In support, Column 8, lines 63-65, disclose that the different etched layers are not separated during manufacturing.”, Applicant’s interpretation of the structure of the rejection is flawed. The Examiner specifically stated in the rejection:

“

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Bennin to etch the stainless steel metallic layer by a photo etching method, and plate a wiring part by the semi-additive method as taught by Horiuchi.

”

Nowhere in the Examiner’s statement is there a “replacement” of the semi-additive step with etching.

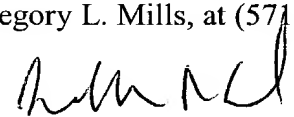
8. Applicant states that “It is noted that this electroplating is merely the plating of selected portions of the traces 71 which are formed by the etching step of Bennin. This is merely the addition of a plating to an existing trace and the reference in Column 8 is not to the actual formation of the traces. Rather, formation of the traces is only accomplished in Bennin by the etching step.” The Examiner disagrees. Bennin’s traces are “formed” (Applicant’s fourth step) once Bennin plates the selected portions of the traces 71 which are formed (Applicant’s second step) by the etching step of Bennin.

Conclusion

9. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after final fax phone number for the 1763 art unit is (703) 872-9311. The official before final fax phone number for the 1763 art unit is (703) 872-9310. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (571) 272-1439.



JEFFRIE R. LUND
PRIMARY EXAMINER